

Exponents Quiz 35

1) Evaluate the following. Write as a rational number.

a) 6^3 b) 3^{-4} c) $144^{1/2}$ d) $8^{5/3}$ e) $(3/5)^2$

2) Write as an exponent with a single base.

a) $4^{-4}/4^7$ b) $8^1 \times 8^{-1}$ c) $(64^3)^{1/2}$ d) $25^4 \times 5^2$ e) $6^4/3^4$

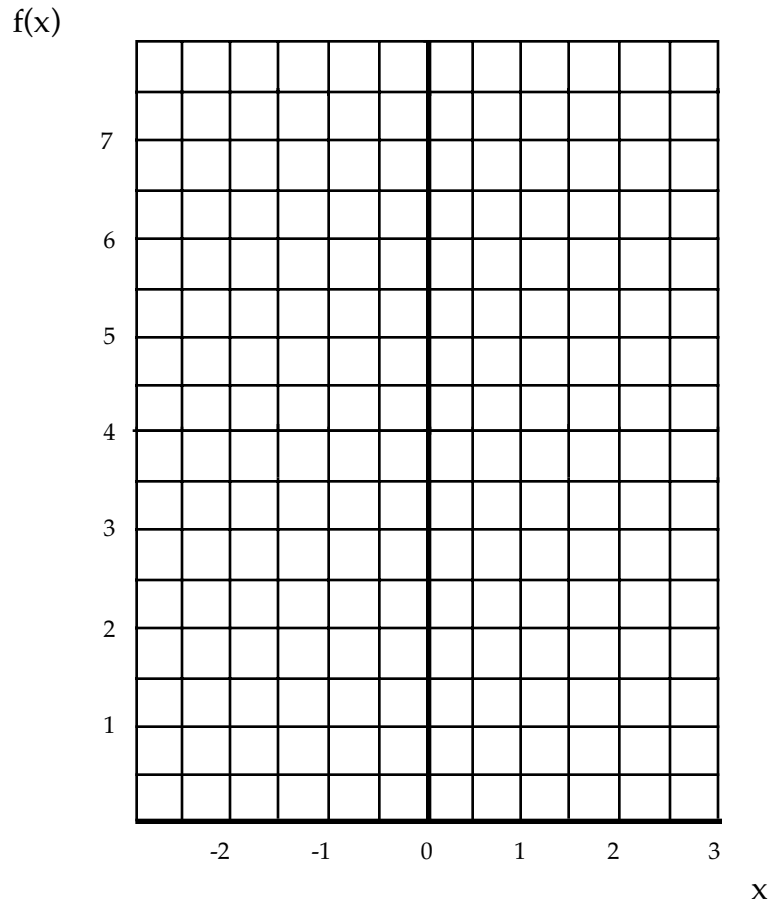
3) Solve for x.

a) $4^x = 4^{-6}$ b) $3^x = 243$ c) $12^x = 1/144$ d) $5^{2x+2} = 25^4$

4) Solve for x. Give answer to 2 decimals.

a) $x^2 = 55$ b) $x^5 = 1024$ c) $4 \times x^3 = -864$ d) $x^8 = 4600$

5) Graph the function $y = 2^{-x}$.



6) Suppose that you deposit \$3400 in a bank account. The annual interest rate is 7.5%. Answer the following interest rate problems.

a) Find the amount of money in your account after one year if interest is compounded annually.

b) Find the amount of money in your account after three years if the interest is compounded annually.

c) Find the amount of money in your account after three years if the interest is compounded quarterly (four times per year).

7) The population of a city grows at a rate of 3.5%. The current population is 87,000. Find the population in ten years.

8) A new car is worth \$18,000. The value depreciates at 15% per year. Find the value of the car in five years.

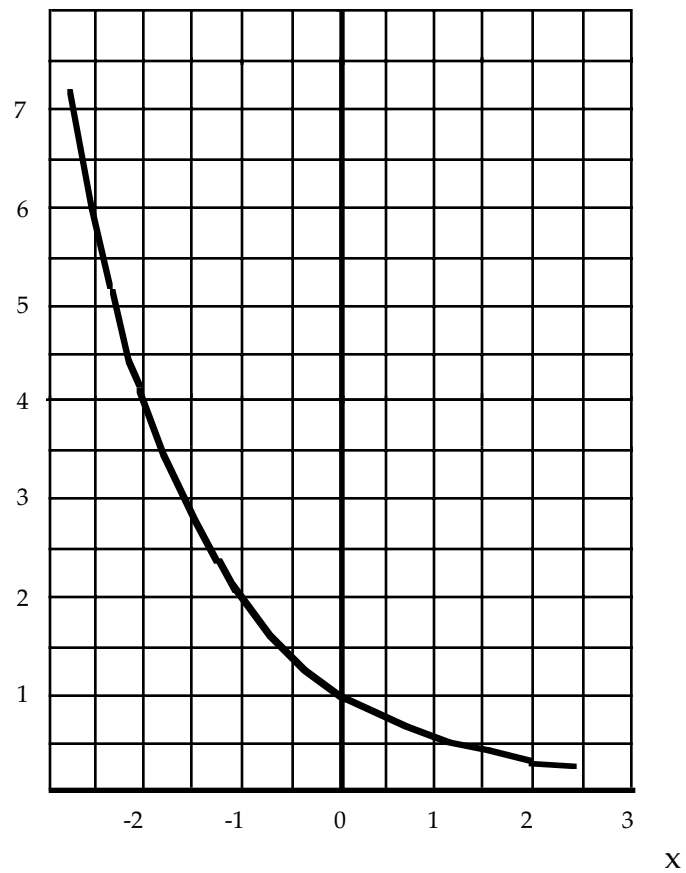
9) The half-life of phosphorus-32 is 14 days. The initial amount of the isotope is 16 grams. Answer the following questions.

a) Find the amount of isotope left after 28 days.

b) Write an equation which gives the amount (A) of the isotope left after (t) days.

Answers: 1)a) 216, b) $1/81$, c) 12, d) 32, e) $9/25$, 2)a) 4^{-11} , b) 8^0 , c) 2^9 , d) 5^{10} , e) 2^4 , 3)a) -6, b) 5, c) -2, d) 3, 4)a) 7.42, b) 4.00, c) -6.00, d) 2.86, 5)

f(x)



6)a) \$3655.00, b) 4223.81, c) 4249.04, 7) 122,722, 8) \$7986.70,
9)a) 4 grams, b) $A = 16(2)^{-t/14}$.